Manitoba
Industry, Trade
and Technology

# Manitoba Health Industries

Department of Industry, Trade and Technology
Government of Manitoba

# MANITOBA AND HEALTH INDUSTRIES
## - An Overview -

Health Industry Development Initiative
October, 1987

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SUMMARY.

Health Industries are characterized by excellence and innovation in research and development, manufacturing and services. In seeking these criteria, your company must decide on a location to conduct its operations which will optimally contribute to quality products and a profitable venture. This decision is based on three parameters: the capital and operating costs of the venture; the external infrastructure supporting your efforts; and the social and economic environment supporting your employees.

In making this decision, the Government of Manitoba would like you to consider this province as the site for your new or expanded operation. Manitoba has a solid history in health care innovation and industry and a bright future on the horizon. We have the right mix of a diverse economy, supportive business infrastructure, world-class health research and development resources, strategic geography, and a high quality of life to foster and excell in health industries. If your company is looking for excellence and a place to grow, Manitoba offers an exciting opportunity for you.

Winnipeg, the capital city of Manitoba, is strategically located at the geographic centre of North America. This location and excellent continental communication and transportation interconnections offers major advantages in the ease and cost of servicing clients and accessing suppliers. Manitoba's highly diversified economy results in a stable economic environment in which your firm can establish and grow. First-rate local suppliers can readily be found from an experienced manufacturing sector.

Manitoba offers very competitive capital cost advantages for your operation: industrial land costs, industrial space and office leases in Winnipeg are much lower than those found in most other North American cities. Perhaps more importantly, your operating costs in Manitoba will be significantly lower. Average weekly manufacturing earnings in this province are the lowest in Canada creating a relatively low cost wage environment. This is a result of Winnipeg having one of the lowest costs of living compared to other major Canadian cities. Moreover, the workforce is highly stable with a very low rate of work stoppages and has been characterized by both local and international companies as having a very strong work-ethic.

Manitoba has the required infrastructure - education, research and development, health institutions and programs, and governmental assistance - to support your company's establishment or expansion in Health Industries. Manitoba has three universities and three major technical colleges to supply a highly skilled workforce. Medical and health-related disciplines are priority areas in these institutions and cover the Health Industries spectrum. Manitoba has an active, diversified and successful research community. The expertise is here to solve technical problems and to create, develop, and adapt technology to make Health Industries competitive in the markeplace and world-leaders in innovation. Manitoba is well known for excellence in medical, health care delivery and biological research; in information, communication, and automation research and development; and in clinical research and development. Government assistance programs are well developed and can often be tailored to your firm's special requirements. These include technical assistance, market assistance, venture capitalization, loans, subsidies, cost-sharing and grants.

SUMMARY (Cont'd).

Health Industries are competitive and demanding. A satisfying and supportive environment for employees and their families greatly enhances the productivity and continuity of the workplace. The right balance of comfort and pleasure and at the right cost makes Manitoba an ideal environment for raising a family and enjoying the "fruits of one's labour". You will discover than Manitoba is more than a great place to do business; its a great place to live.

Manitoba's largest city, Winnipeg, offers its residents a safe, clean, progressive environment. The cost of living in Winnipeg is one of the lowest of major Canadian cities. Quality housing is available at very reasonable cost. Manitoba has an excellent education system, with public schools from kindergarden to grade 12 and first-rate post-secondary institutions. Fine private schools based on religious, cultural, special needs, or academic programs are located in and around Winnipeg. Provincial health and social services are equal or superior to Canadian standards or American programs and a number of Manitoba's innovative community care and home care programs are world-acclaimed.

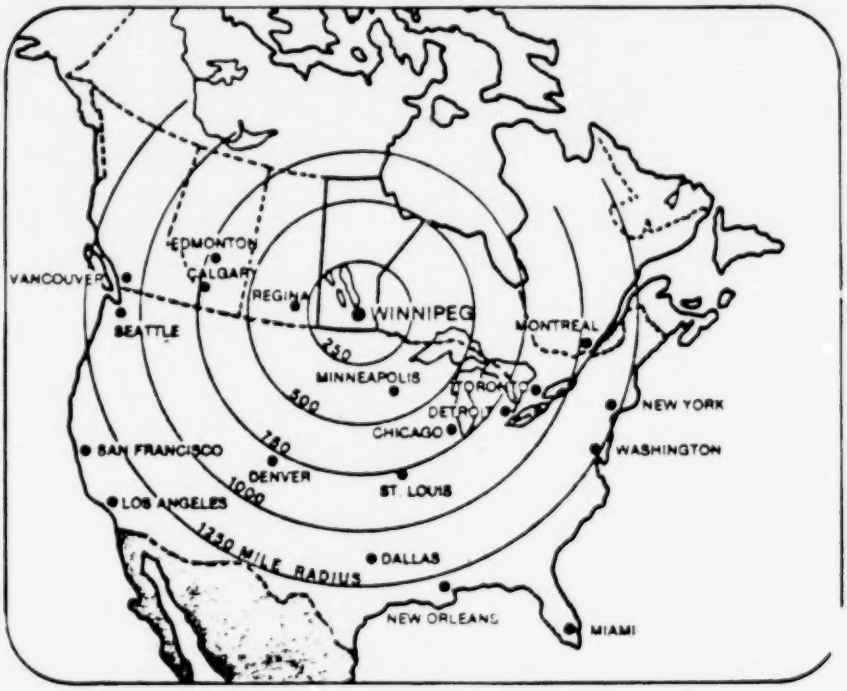
Winnipeg is in many ways the cultural centre of mid-continental North American and excellence in art, dance, music, theatre, museums and dining in the city is recognized internationally. The province offers a diverse and extensive range of sports and recreational opportunities from spectacular provincial parks to an extensive park system in Winnipeg. Sport facilities abound in the city encompassing a wide array of recreational activities. Annual events include Folkorama, a pagentry of the ethnic diversity of the province and one of the top 100 events of North America. And with over 50 distinct ethnic groups, Manitobans are well-known for their tolerance and frendliness and the ethnic diversity adds an exciting cosmopolitan flavour to our activities.

Manitoba has the key components to contribute to your company's development in Health Industries. The province has the right economic environment for your firm; with world-class expertise and programs to support your efforts; and the quality of life found in Manitoba is very attractive for your employees and supportive of high productivity demanded in Health Industries. The Government of Manitoba invites you to consider this province as the site for your new or expanded operation.

EXHIBIT 1

WINNIPEG

STRATEGICALLY LOCATED WITH 80 MILLION PEOPLE WITHIN A 1000 MILE RADIUS



## MANITOBA AND HEALTH INDUSTRIES

Manitoba has a solid history in health care innovation and industry and a bright future on the horizon. The province has the right mix of a diverse economy, supportive business infrastructure, world-class health research and development resources, strategic geography and a high quality of life to foster
and excell in health industries. The Government of Manitoba would like you to consider Manitoba as the site for your new or expanded Health Industry venture.

### GEOGRAPHY.

Location. At the centre of the continent, Manitoba is strategically located to service your clients anywhere in North American. (Refer to map shown in Exhibit 1.)

- Winnipeg, the capital city, is located 450 miles north of Minneapolis, with daily direct air commuting between Minnesota's "Medical Alley".
- Located in the Central Time Zone, there is only one hour difference to the eastern U.S., and only two hours difference to the west coast, providing the broadest convenient time window for easy telephone access to clients and suppliers.
- 80 million people live within a 1000 mile radius of Winnipeg.
- Winnipeg is ideally located to capture markets and interact with suppliers:
  - within 250 miles: Brandon Man., Fargo ND.
  - within 500 miles: Regina & Saskatoon Sask., Minneapolis & Duluth, Thunder Bay, Ont.
  - within 750 miles: Calgary, Edmonton, Denver, Omaha, Chicago.
  - within 1000 miles: Toronto, Ottawa, St. Louis, Detroit.
  - within 1250 miles: Vancouver, Dallas, New York, Montreal.

Demography. Manitoba has a population of just over one million people living in a variety of demographic locations. The wide range of population centres includes remote villages and cities (e.g. Thompson, population 14,000), rural hamlets and cities (e.g. Brandon, 36,000) to the major metropolitan centre and provincial capital of Winnipeg, with a metropolitan population of 625,000. This ideal population distribution has long been recognized by marketing analysts and Manitoba has been the selected site of numerous product testing and marketing studies. Significant demographic information includes:

- Population Stability: Manitoba is an attractive place to live and work, with established and newly arrived Manitobans having a strong propensity to stay in the province.

- Age Distribution: Manitobans reflect the general age distribution found in North American, with a significant shift toward more elderly age groups. This constitutes a substantial advantage for Health Industries as a model environment to test their products and services toward the seniors market, a rapidly growing and high consuming market segment.

- Population Mix: With over fifty distinct ethnic groups, Manitobans are well-known for their tolerance and frendliness. Companies at the cutting-edge recuit the best personnel from the world-over; in Manitoba, the ethnic diversity is welcoming and lends an exciting cosmopolitan flavour to our activities. In addition, Canada's bi-lingual/bi-cultural flavour is readily present in Manitoba, with St.Boniface (a suburb of Winnipeg) being the largest metropolitan francophone centre outside of Quebec.

ECONOMY.

General Outlook. Manitoba has had an enviable record of performance in the 1980's and the prospects for the future are just a bright. The province's strengths are a diversified economy, experienced manufacturing base, strong employment record, and major construction developments. Manitoba's prospects over the next two years, as reported in the last quarter of 1986/7 by a major chartered bank, the Canadian Imperial Bank of Commerce are:

- Economic Growth Rate: Manitoba will grow at 3.6% in 1986/87 and 2.7% in 1987/88, compared to the national average of 3.1% and 2.5% respectively. Manitoba will experience the second fastest growth rate in the country, behind only Ontario over the coming two years.
- Consumer Confidence: Retail sales in Manitoba will rise by 9.2% this year and a further 6.9% in 1987/88, compared to Canada as a whole with forecasted increases of 8.5% and 6.7% respectively.
- Job Creation and Unemployment: In 1986/87, the creation of 15,000 jobs are predicted, with a further 12,000 in 1987/88. Manitoba should have the second lowest rate of unemployment, just behind that of Ontario, with average rates of 7.3% this year and 7.7% next year.

Manitoba's future has been recently summarized by one of Canada's largest banks: "We expect Manitoba to lead the nation in terms of real growth during the decade to 1994."

Manitoba's Diversified Economy. Manitoba is seen as a rising star in Canada because of its successful efforts at economic diversification. The percentage share of total real Gross Domestic Product (GDP) for 1985 by sector was:

| | |
|---|---|
| - community, business and personal services | 23.6% |
| - finance, insurance, and real estate | 18.0% |
| - transportation, communications, and storage | 11.5% |
| - manufacturing | 11.3% |
| - wholesale and retail trade | 11.3% |
| - agriculture | 8.1% |
| - public administration | 6.1% |
| - non- agriculture primary (mining, forestry) | 3.5% |
| - utilities | 3.4% |
| - construction | 3.3% |

The combined industry-related sectors (transportation, communication and storage; wholesale and retail trade; and manufacturing) contribute more that one-third to the total GDP. Half of the province's manufacturing output is shipped to other provinces with an additional 12% sent out of the country. The most important industries in the manufacturing sector are:

- food and beverage products,
- transportation equipment,
- clothing,
- machinery,
- metal fabrication,
- printing and publishing,
- electronics and electrical products,
- chemicals and chemical products.

Health care is the largest single economic activity in Manitoba, as evidenced by the expenditure of one-third of the entire Provincial Budget, equalling $1.2 billion, on health-related activities.

## HEALTH RESEARCH AND DEVELOPMENT INFRASTRUCTURE.

Health Industries are characterized by excellence and innovation. Manitoba has the required infrastructure – education; research and development facilities; health institutions and programs; and governmental assistance – to meet these demanding criteria.

Education. A highly skilled workforce is a prerequisite for success in the demanding health industry sector and Manitoba is home to three universities. The University of Manitoba is Western Canada's oldest academic institution, with annual enrollment of 22,500 students and over 36 million dollars received in research funding. Approximately 100 physicians and 30 dentists graduate from this university annually. Medical and health-related disciplines include:

- Dentistry and Dental Hygiene
- Medicine
- Nursing
- Pharmacy
- Social Work
- Natural and Medical Sciences
- Occupational Therapy
- Physical Therapy
- Physical Education
- Engineering
- Agriculture
- Human Ecology

Three major technical colleges deliver extensive community college programs throughout the province. Combined enrollment is over 33,000 student and health-related training includes:

- Chemical/Biochemical Technologies
- Computer/Instrumentation Technologies
- Electrical/Electronic Technologies
- Health Record Technology
- Nursing
- Animal Health Technology
- Dental Hygiene
- Physical Education
- Medical Laboratory, Radiology, and Nuclear Medicine Technologies

Research and Development. Manitoba has a diversified, active and successful research community. The expertise is here to solve technical problems and to create, develop and adapt technology to make Manitoba Health Industries competitive in the marketplace and world-leaders in innovation. This capabilities have been derived through co-operative efforts amongst universities, health institutions, research institutes and foundations and government agencies working in concert with commercial enterprises and individual entrepreneurs. This spirit and our will to succeed assures that Health Industries in Manitoba will excell.

- Medical, Health Care Delivery and Biological Research: World-class expertise in:

  - pharmacology
  - cellular and molecular biology
  - psychiatry and neurosciences
  - heamatology and blood products
  - health care delivery studies
  - physiology
  - immunology
  - respirology
  - cardiology
  - sociology/behavioural sciences

  can be found in Manitoba's universities and research institutes. The Winnipeg Rh Institute Inc., a non-profit corporation, is a world leader in blood research and biotechnical application and has one of the most modern plasma fractionation plants of its kind. The Manitoba Institute of Cell Biology, associated with the Manitoba Cancer Treatment and Research Foundation, is engaged in basic research in cellular

HEALTH RESEARCH AND DEVELOPMENT INFRASTRUCTURE (Cont'd).

and molecular biology and immunology. The **Centre on Aging**, University of Manitoba, is conducting research on the social and behavioural aspects of aging and epidemiological studies on the effectiveness and efficiency of the delivery of health care services. Three major hospital research foundations are currently engaged in a massive expansion of their activities. The St. **Boniface General Hospital Research Foundation** has just completed a new $11 million, 96,000 sq.ft., research facility to further research in a number of areas including cardiology, the neurosciences, and clinical immunology. The **Children's Hospital of Winnipeg Research Foundation** has championed a $3.5 million project to accommodate increased research on child health. The **Health Sciences Centre Research Foundation** is developing a 22,000 sq.ft. facility to enhance basic and clinical research resources. Recently announced, the Federal Department of Health will be locating its $93 million **Canadian Virology Laboratory** in Winnipeg. As part of the Canadian Laboratory for Disease Control, the Virology Laboratory will be one of only three state-of-the-art public health facilities in North America for the identification of viruses and bacteria which cause human disease. The **Whiteshell Nuclear Research Establishment** complements the resources of health industry through technology transfer and consulting in medical biophysics, chemistry, and occupational and environmental health. Manitoba supports the **Canadian Food Products Development Centre** which can provide technical assistance in product development relating to health nutrition. Similarly, Agriculture Canada Research Stations and the Freshwater Institute offer exciting research and development cross-over opportunities in health-agriculture and health-aquaculture.

Information, Communication and Automation Research and Development: The information age has had a major impact on the goods and services provided by Health Industries. Computerized health care information systems, automated and computerized laboratory and diagnostic equipment, and "thinking" consumer health products form exciting market opportunities. Manitoba has the resources to further excellence in product research and development in these fields. The **InfoTech Resource Centre** is the first Canadian joint industry-government computer resource centre and was developed to further educational technology, office technology, and electronic distribution of information. The **Industrial Applications** of **Microelectronics Centre** located at the University of Manitoba, provides engineering services, industrial training, and applied and basic research in the micro-electronics field. An exciting recent development is the joint venture between the Province of Manitoba and Unisys (Burroughs Sperry) Canada in the creation of a **Unisys National Health Care Competency Centre** in Manitoba for the research and development of health care software and consulting, and marketing support activities. The **Industrial Technology Centre**, supported by the Manitoba Research Council, offers services including: prototype development and evaluation; computer aided engineering; process development; systems design; and plant layout. Industrial automation technology is the latest technology frontier and the **Canadian Institute of Industrial Technology** is ready to meet the challenge. This newly-opened $36 million, 180,000 sq.ft. complex provides access for the smallest to the largest health industry enterprise to: numerically-controlled machine centres; sensor-based robotics systems; flexible manufacturing cells; CAD/CAM hardware and software; and computer integrated manufacturing systems.

HEALTH RESEARCH AND DEVELOPMENT INFRASTRUCTURE (Cont'd).

*Hospital and Health Services.* Manitoba has an international reputation for excellence in health care from clinical expertise to community health programs. Health Industries rely on clinical consultation and testing and field studies in a wide variety of situations and Manitoba is ideally suited to provide this resource. Manitoba's two teaching hospitals, the Health Sciences Centre and St. Boniface General Hospital, have a combined in-patient bed capacity of 2000 and offer the entire range of in-hospital, ambulatory care, day surgery, day hospital, and community out-reach clinical programs. The Children's Hospital of Winnipeg, the Rehabilitation Centre for Children, and the Manitoba Adolescent Treatment Centre provide acute, chronic and psychiatric care to those under 18 years of age. Adult chronic care and rehabilitation services are provided by the Winnipeg Municipal Hospital, Deer Lodge Hospital and Rehabilitation and Respiratory Hospital. Referral and community hospitals and personal care (i.e., nursing) homes can be found in remote northern locations, in rural areas, and in major towns and cities throughout the province. Innovative community and home care programs have been implemented and have received world-wide acclaim. In addition, Manitoba has an integrated health system with a highly accessible health care claims data base. This supports first-class research in health care delivery systems which is offering exciting insites into more efficient and effective health care methods and leading-edge market opportunities.

Government. Manitoba's history of a stable economic environment is due in no small measure to consistent and supportive governmental measures. Provincial priorities for the Health Industries sector include job creation, economic development and enhanced health care services.

Federal Government sponsored industry and R & D incentives include:

- Canadian Industrial and Regional Development Programs: Administered by the Government of Canada and actively marketed by Manitoba Industry, Trade and Technology, these programs offer business locating in the province a wide range of financial support. During 1985, $13 million was contributed for grants, participation loans, loan guarantees and repayment contributions. Financial support is available over various phases of a product or company's life cycle including:
  - Innovation (Product or Process Development)
  - Modernizations
  - Establishment of Plants
  - Market Research
  - Expansions

- Investment Canada: Foreign investment continues to play an important role in Canada and Manitoba. Investment Canada is intended to upgrade the quality of foreign investment and improve linkages to the Canadian economy. The Investment Canada Act exempts most business establishments by non-Canadians. Exempt from review are direct acquisitions of Canadian businesses with assets under $5 million and most indirect acquisitions with assets under $50 million. Exempt investments will only require notification with the Agency.

- Manitoba-Canada Initiatives: Manitoba was the first Canadian province to enter into a new 10-year Economic and Regional Development Agreement (ERDA) with the Government of Canada in 1984. It will make provision for extensive economic development financing in Manitoba during the next five years and $425 million have been committed to date.

HEALTH RESEARCH AND DEVELOPMENT INFRASTRUCTURE (Cont'd).

The Government of Manitoba is actively engaged in promoting Health Industries in the province and offers the following stimulative programs:

- Investment Decision Studies: The Manitoba Government will cost-share certain feasibility studies to assist potential investors considering Manitoba as a new business location. Cost-sharing may consist of:
  - fees for external consultants
  - travel expenses
  - site location search in Manitoba
  - technical support staff
  - an investor's own staff salaries and expenses while undertaking study work in Manitoba.

- Development Agreements: In 1983, the Province of Manitoba introduced a new funding concept which reinforces the province's commitment to long-term economic development. One goal is to encourage the establishment and expansion of major business enterprises through Development Agreements. These Agreements are a highly flexible mechanism which allow the province to provide tailored incentives in order to secure entrepreneurial investment, long term job creation, and socio-economic benefits in Manitoba. Incentives offered to businesses can include loans or loan guarantees, interest subsidies, training grants, and other forms of more direct financial assistance.

- Venture Capital: To stimulate the flow of equity capital into selected small Manitoba businesses, Manitoba Business Development and Tourism will invest along with private industry in the establishment of new or exisitng companies in the province, on a 35-65 basis. Eligible investors must be Canadian residents or corporations with head offices and voting shares controlled by Canadians.

- Manitoba Industry, Trade and Technology: This provincial department works co-operatively with the private sector to promote the expansion and development of businesses in Manitoba. The Department is active in a number of areas: it supports starting and expanding businesses; it assists Manitoba exporters to compete in international markets, and; it promotes the expansion of Manitoba's technological base. This department offers:
  - provision of technical/professional guidance and information
  - cost-sharing of feasibility studies
  - assistance in accessing governmental development programs
  - research and analysis to provide product and market assessment
  - assistance to industry in adapting technology to need specific needs
  - support for development of technology-creative/adaptive businesses
  - assistance in finding local suppliers of good and service.

- Health Industry Development Initiative: A branch of Manitoba Industry, Trade and Technology, "H.I.D.I." is exclusively directed towards economic development in Health Industries. In addition to acting as a gateway to federal, provincial and municipal government assistance and offering a wide range of technological, marketing and managerial expertise, our office is committed to the realization of commercial endeavours, not simply the application of government programs. We are willing and prepared to work with you through every stage in the development of your commercial initiative. It is this will to bring about entrepreneurial successes, to "part the red tape", to MAKE IT HAPPEN, which excites our staff in our own pursuit of excellence. The specifics of our activities are given in Appendix I of this paper.

STRATEGIC BUSINESS INFORMATION.

In approaching a business location decision, factors which contibute to the cost of goods produced and the profitability of the venture are all important. Taken as a whole, Manitoba offers a very competitive position when compared to other locations.

U.S.– Canadian Currency Exchange Rate: The current U.S.– Canadian currency exchange rate is approximately $1 U.S. = $1.31 Canadian, which significantly enhances the purchasing power of investments using American currency.

Salaries and Wages. Health Industries, because of the attention to detail and high quality assurance required in their products, are relatively labour intensive. The high labour cost component of good produced can be controlled through substitution with capital intensive equipment (often a significant barrier to entry) or by locating the enterprise in a relatively inexpensive labour market. Manitoba has the lowest manufacturing labour cost record in Canada as shown in the following table:

Average Weekly Manufacturing Earnings (includes overtime) – January 1986

| Province | Weekly Rate ($US) | Province | Weekly Rate ($US) |
|---|---|---|---|
| Manitoba | 294 | Saskatchewan | 333 |
| Newfoundland | 311 | Ontario | 370 |
| Nova Scotia | 311 | Alberta | 373 |
| New Brunswick | 319 | British Columbia | 402 |
| Quebec | 329 | CANADA (average) | 356 |

Labour Force Stability. Manitoba's low cost labour environment has not been a cause of labour unrest since Manitoba has the second lowest percentage of time lost due to work stoppage of any province in Canada:

Labour Force Stability: Percent Time Lost Due to Work Stoppage – 1980–84

| Province | % Time Lost | Province | % Time Lost |
|---|---|---|---|
| P.E.I. | 0.05 | Ontario | 0.19 |
| Manitoba | 0.08 | Nova Scotia | 0.21 |
| Alberta | 0.12 | Quebec | 0.36 |
| New Brunswick | 0.17 | British Columbia | 0.47 |
| Saskatchewan | 0.17 | Newfoundland | 0.70 |
| | | CANADA (average) | 0.27 |

Energy Cost and Reliability. Manitoba has the most inexpensive electrical energy costs in North America, and one of the lowest in the world. Compared to an average from major Canadian markets, Manitoba supplies electricity at approximately two–thirds the cost, and compared to a similar average from major American cities, at about one–third the cost. In addition, Manitoba's electrical supply and distribution system is extremely reliable. "Brown–outs" and power interuptions are almost unknown, thus minimizing the possibility of the disruption of production schedules or delicate computer operations.

Office and Industrial Space. Winnipeg offers very competitively priced office and industrial space. Office rental rates for Canadian cities in June 1987:

| | | | |
|---|---|---|---|
| Winnipeg | $11.75/sq.ft. | Montreal | $22.00/sq.ft. |
| Edmonton | $13.00/sq.ft. | Ottawa | $20.75/sq.ft. |
| Regina | $18.25/sq.ft. | Vancouver | $20.00/sq.ft. |
| Calgary | $11.00/sq.ft. | Toronto | $29.50/sq.ft. |

STRATEGIC BUSINESS INFORMATION (Cont'd).

Land costs within the four major industrial zones in the city range from $43,000 to $100,000 per acre (1986). Comparative industrial square footage costs for major Canadian cities in 1986 are:

| | | | |
|---|---|---|---|
| Edmonton | $2.50 - $3.50 | Toronto | $2.80 - $4.50 |
| Winnipeg | $3.00 - $3.50 | Vancouver | $3.00 - $5.00 |
| Calgary | $2.50 - $4.00 | Regina | $4.25 - $4.25 |
| Saskatoon | $3.00 - $4.00 | Ottawa | $4.00 - $5.75 |
| Montreal | $3.25 - $4.00 | CANADA (average) | $3.00 - $5.00 |

Transportation. Excellent road, rail, air and ship transportation connections open the whole world to Manitoba products.

- Air: The Winnipeg International Airport is serviced by seven national and international carriers with direct daily flights to all major Canadian cities and to American cities such as Minneapolis, Detroit, Chicago, Los Angeles, and Tampa.
- Road: Eight of Canada's 14 largest trucking firms are headquartered in Manitoba. Direct trucking service connects all major Canadian cities and U.S. cities including New York, Houston, Los Angeles and Minneapolis.
- Rail: Manitoba is fully serviced by Canada's two intermodal national rail systems with service to the United States provided by American subsidiaries of these carriers. In addition, Burlington Northern Railroad provides direct rail connection to 25 states.

Taxation and Investment Credits. Canadian corporate tax rates are generally higher that those in the United States, but the social services provided by these Canadian tax dollars significantly reduce the cost to corporations for employee health, benefit, and retirement/pension plans. In addition, the efficient social service programs (e.g, inexpensive post-secondary education, child allowance programs, etc.) provided to Manitobans reduce the need for higher wages to purchase these services on an individual basis. Therefore, Canada's and Manitoba's tax structure, as part of an overall social and economic strategy, is supportive of a highly competitive position as a prime location for commercial endeavours.

- Corporate Taxation: Manitoba corporate income tax is levied as a percentage of taxable income which is 10% for small Canadian corporations on active business income (federal basis) of less that $200,000. All other corporations are taxed at 17%. Manitoba has a rate of capital taxation of 0.3% of the paid up capital of companies.

- Sales Tax: The effective rate of provincial sales tax in Manitoba is 7%. No sales tax is applicable on materials used in the manufacture of goods for sale. Sales made outside of the province are exempt from the Manitoba tax.

- Levy for Health and Post-Secondary Education: A levy of 1.5% of the payroll is collected from all employers in Manitoba with an annual payroll greater that $75,000.

- Investment Credits: A Canadian investment tax credit applies to the acquisition of depreciable property used in the manufacturing sector.

STRATEGIC BUSINESS INFORMATION (Cont'd).

Effective rates for these credits are 10% in 1986, 7% in 1987, and 3% in 1988. A research and development investment tax credit of 20% is also in effect.

Leading Companies. Manitoba has historically been the financial centre of Western Canada and the headquarters of Canada's grain industry. The **Winnipeg Commodity Exchange**, established in 1887, is Canada's oldest cash and futures market. **Richardson Greenshields of Canada, Ltd.**, the largest member of the Toronto Stock Exchange, has its head office in Winnipeg. The **Investors Group** also makes Manitoba well-known to the North American investment community. Manitoba is an insurance industry leader and home to **Great West Life Assurance Company**, which ranks third in total assets in Canada.

Health care and medical products fields continue to attract meaningful investments to Manitoba – industries that have taken advantage of the province's existing high technology environment, favourable industrial location factors and internationally recognized research capabilities. European prosthetic and orthotic device manufacturer, **Otto Bock Orthopedic Industry of Canada Ltd.**, chose Winnipeg as its second international subsidiary location. **Chemfet**, an American sensor company, recently established Winnipeg as the world-wide manufacturing centre for its innovative integrated circuit pH and ion electode system. Reasons for this location included favorable exchange rates and regulatory climate, and our "world- recognized" research centres. An award-winning Manitoba company, **Export Packers Company Ltd.** is a world's leading producer of Lysozyme, an anti- microbial agent, and has established a world-class enzyme and micro-protein processing research centre. **ABI Biotechnology Inc.** is a bio-science company that has recently invested in promising biotechnology research, including the development of human growth hormon, Interleukin-2, protein separation technology, and health care diagnostic formulations. **3M (Minnesota Mining and Manufacturing)** produces electodes and tendon implants in their Morden, Manitoba plant. **Unisys (Burroughs-Sperry)** is engaged in the development and marketing of Health Care Information Systems software. A full listing of Manitoba Health Industries companies is given in Appendix II of this report.

QUALITY OF LIFE.

Health Industries are competetive and demanding. A satisfying and supportive environment for employees and their families greatly enhances the productivity and continuity of the workplace. The right balance of comfort and pleasure and at the right cost makes Manitoba an ideal environment for raising a family and enjoying the "fruits of one's labour". Manitoba – more than a great place to do business, a great place to live.

Manitoba's capital city, Winnipeg offers its residents a safe, clean, progressive environment. It is ideal for families as it has a very good public school system and the universities are of high calibre. Winnipeg's population is well known for its friendliness and there is a strong sense of community involvement and pride. The city's communities are well planned with many parks and playgrounds. There is a vibrant night life with many sources of different quality entertainment. Indeed, the prestigious Michelin Guide rates Winnipeg as a three-star destination, its highest rating. There is also a multitude of arenas, swimming pools, golf courses, tennis courts and other recreational facilities within

QUALITY OF LIFE (Cont'd).

the city. In the environs surrounding Winnipeg are some of the most beautiful lake country in the world. Over 4,000 square miles of provincial park land present summer and winter recreational opportunities for all to enjoy.

Cost of Living. A recent independent survey of the comparative cost of living has been prepared for major urban centres in Canada. This analysis includes all costs in the categories of housing, taxation, transportation, and goods and services and is based on a married couple with two children.

| Location | Cost of Living ($ CND) | Location | Cost of Living ($ CND) |
|---|---|---|---|
| Ottawa | $42,084 | Vancouver | $44,643 |
| Winnipeg | $42,666 | Montreal | $46,303 |
| Regina | $43,329 | Halifax | $46,886 |
| Calgary | $44,546 | Toronto | $48,665 |
| | | AVERAGE | $44,890 |

Housing. Two important factors considered by families are the quality and price of housing.

- Quality of Housing: Cities and towns in Manitoba offer a wide variety of quality housing to meet any need perceived by prospective residents.
- House Prices: A survey of house prices (1986 actual Canadian dollars) by major Canadian cities has been prepared by Royal Lepage Realty:

| City | Bungalow | Townhouse | City | Bungalow | Townhouse |
|---|---|---|---|---|---|
| Montreal | 72,000 | 64,000 | Calgary | 98,000 | 45,000 |
| Regina | 85,000 | 51,000 | Thunder Bay | 100,000 | - |
| Winnipeg | 87,000 | 40,000 | Ottawa | 109,000 | 72,000 |
| Saskatoon | 87,000 | 62,000 | Toronto | 110,000 | 64,500 |
| Victoria | 88,000 | 65,000 | Halifax | 124,000 | 88,000 |
| Edmonton | 90,000 | 50,000 | Vancouver | 200,000 | 145,000 |
| | | | AVERAGE | 104,000 | 67,900 |

Sports and Recreation. Manitoba offers a diverse and extensive range of sporting and recreational opportunities to its residents and visitors. In short, "Do we have activities for you!"

- Provincial Parks: Manitoba's tremendous geographical diversity is reflected in the types of regional parkland in the province. Fresh water is our greatest natural resource and Lake Winnipeg is the 7th largest lake in North America. The provincial park system comprise 12 natural parks, 44 recreational parks, 104 road wayside parks, two heritage parks, and four special-use parks. Activities include: hunting, fishing, hiking, canoeing, swimming, camping, golf, horseback riding, down-hill skiing, cross-country skiing, and snowmobile trails.

- Parks in Winnipeg: Winnipeg has an extensive park system, offering its residents the beauty and charm of over 7,000 acres of park land with services, facilities and attractions for every member of the family. The city maintains over 20 miles of riverbank to afford public access to one of the city's natural assets.

QUALITY OF LIFE (Cont'd).

- Winnipeg's Sport Facilities: There are five outdoor, fully developed fitness trails in Winnipeg and two fully equipped city owned recreation complexes. As well, the YWCA, the YMHA, and YMCA branches have complete athletic facilities. The city operates 13 indoor swimming pools and there are various swimming clubs. Sport activities in and around Winnipeg include: curling, golf, tennis and racket sports, bowling, martial arts, swimming and diving, sail and power boating and water skiing, cricket and English lawn bowling, recreational skating and hockey, cycling, horse riding, and skiing.

- Professional Sports: Winnipeg is the home to a number of professional and semi-profession teams and sporting events: football (Winnipeg Blue Bombers of the Canadian Football League), hockey (Winnipeg Jets of the National Hockey League), horse racing (thoroughbreds and harness racing) and auto racing (Winnipeg Speedway and Gimli Raceway).

Annual Events. Manitoba has close to 50 festivals that reflect the richness of its natural resources and various cultural backgrounds of its people. All are fun-filled events with contests, special foods, and celebrations. Outstanding among them in summer are the Provincial Exhibition of Manitoba in Brandon, Folklorama in Winnipeg (ranked as one of North America's 100 best annual events), the Icelandic Festival in Gimli, the Winnipeg Folk Festival (one of the largest in North America), Canada's National Ukrainian Festival in Dauphin, Opasquia Indian Days in The Pas, Pioneer Days in Steinbach, the Morris Stampede in Morris, the Fete Franco-Manitobaine in La Broquerie, and the Corn and Apple Festival in Morden. Winter brings the Festival du Voyageur in St.Boniface, the Trappers' Festival in The Pas, the Canadian Power Toboggan Championships in Beausejour, and the Royal Manitoba Winter Fair in Brandon.

Cultural Events. Winnipeg is in many ways the cultural centre of mid-continental North America. From the classical arts to the contemporary, from fine restaurants to fascinating museums, Winnipeg offers an exciting array of cultural events to its residents and visitors.
Cultural events and facilities include:

- Art: The Winnipeg Art Gallery, many private gallaries.
- Dance: The world-renowned Royal Winnipeg Ballet and school, Contemporary Dancers, and numerous ethnic dance groups.
- Music: The Winnipeg Symphony Orchestra, Winnipeg Chamber Music Orchestra, Manitoba Opera Association, Winnipeg Jazz Society, the Centennial Concert Hall, the Playhouse Theatre and the Winnipeg Arena.
- Theatre: Le Cercle Moliere, Manitoba Theatre Centre, The Warehouse Theatre, Prairie Theatre Exchange, Actor's Showcase, Phoenix Productions and Rainbow Stage.
- Museums: There are about 130 museums throughout the province, 30 in Winnipeg alone. Of special note, the Manitoba Museum of Man and Nature is one of the finest interpretive museums in Canada.
- Dining: Winnipeg is well known for its culinary exploits. The best of Continental, Ethnic, North American and Oriental dining can be found within many price ranges and interesting settings.

QUALITY OF LIFE (Cont'd).

Education. As previously mentioned, Manitoba has three universities and a community (technical) college system providing first- class and innovative post-secondary education to resident and visiting students. For younger families, primary and secondary education is of major importance. The Manitoba public school system offers kindergarden to grade 12 (senior matriculation) at a standard equal to any province in Canada and generally superior to American public education. In addition, exciting programs such as French immersion, heritage language, special needs, and the International Baccalaurate program are widely available. There are also a number of fine private schools, based on religious (Christian, Roman Catholic, Jewish, Mennonite, Ukrainian Catholic), cultural, day care/nursery, special needs, and/or academic programs.

Climate. Manitoba's climate is characterized by warm, sunny summers and cold winter days. Afternoon temperatures in Winnipeg in July and August average 25 degrees Celsius (77°F) while mid winter daytime readings almost always remain below freezing. Summer and winter temperatures are moderated by low humidity and average annual precipitation is less than 50 cm (20 inches), with over half of the yearly precipitation falling in the summer months. A high percentage of sunny days is a distinguishing feature of the climate of Manitoba, and Winnipeg is one of the five "sunniest cities" in North America.

Health and Social Services. Manitobans receive prepaid hospital and physician's care through the Manitoba Health Services Commission. There are no premiums for these services in the province. Manitoba also has a pharmaceutical reimbursement program that provides for payment of 80 percent of the cost of all prescription drugs in excess of a basic deductible incurred by an individual or family in each calender year.

Manitoba Health operates comprehensive services in public and mental health. The department's public health program includes dental services (and children's preventive dental care), maternal and child health, hearing screening and diagnosis, public health, nursing, communicable disease control, nutrition and home economics, home care and environmental health. The department is also responsible for large health care institutions, such as hospitals, personal care (nursing) homes, and mental health centres. The Alcoholism Foundation of Manitoba operates residential and outpatient alcoholism and drug abuse treatment programs.

Manitoba Community Services operates mental retardation services, rehabilitation services, and child and family services. The department licences, inspects, and sets standards for group homes and day care centres. The department operates provincial correctional institutes and provides probation and field services for the courts. It also financially supports a wide range of non-governmental social service agencies and care givers (such as day care centres).

Manitoba Employment Services and Economic Security operates provincial welfare programs and financial support services for pensioners and low-income working families with children. The department also operates employment services for youth and students, a wide variety of training and employment preparation programs, and settlement assistance programs for immigrants.

APPENDIX I:

Province of Manitoba: Health Industry Development Initiative

## MANITOBA INDUSTRY, TRADE & TECHNOLOGY - HEALTH INDUSTRY DEVELOPMENT INITIATIVE

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**SUMMARY**:

High quality health care services, skilled personnel, a dedicated medical research and development community, and successful medical technology enterprises have combined to make Manitoba a competitive health industry location. Health care commands over $1.2 billion of the provincial economy and 50,000 people were employed in health occupations in 1985.

Manitoba Industry, Trade and Technology invites interest in health industry investments in Manitoba. Our offices are prepared to consult on a wide range of projects including:

- Manufacturing;
- Research and Development;
- Joint Ventures;
- Distribution;
- Services;
- Licensing Agreements;

as they are directed towards:

- Product Development and Manufacturing Opportunities;
- Health Technology Opportunities;
- Health Information/Communication Opportunities and;
- Emerging Needs (aging, rehabilitation, and home care) Opportunities.

**SERVICES AVAILABLE**:

The Health Industry Development Initiative can supply assistance and support to enhance the success of your venture:

- Provision of technical/professional guidance and information;
- Cost-sharing of:
  - feasibility studies and fees for external consultants,
  - an investor's own staff salaries and expenses while undertaking study work in Manitoba,
  - travel expenses,
  - technical support staff,
  - site location search within Manitoba;
- Assistance in gaining access to a variety of governmental business development programs for companies wishing to expand or locate in Manitoba;
- Research, data development and analysis to provide product and market assessment;
- Assistance to industry in adapting technology to meet specific needs and support for the development of technology-creative and technology adaptive business in Manitoba;
- Assistance to investors and developers to find local suppliers of goods and services through the computerized Manitoba Sourcing Directory.

EXPERTISE:

Expertise within the Health Industry Development Initiative includes:

- Pharmacy;
- Biotechnology;
- Engineering;
- Computer, Information, and Communication Technology;
- National and International Marketing;
- Venture Capital and Finance;
- Purchasing and Materiel Management;
- Hospital, Business, and Public Administration.

MAJOR NICHES:

Product Development and Manufacturing Opportunities:

Directed towards the identification and promotion of existing and new manufacturing opportunities, the mission is to replace imported health products with "made-in-Manitoba" products and to enhance export of Manitoba products.

Current manufacturing and processing operations located in Manitoba include:

- Pharmaceutical raw materials
- Thermographic temperature monitoring film
- Medication trolleys
- Chemical reagents for hematology
- Blood products
- Mechanical heart valves
- Specialized furniture for the aged
- Vitamins
- Hospital and nursing home bathing systems
- Medication packaging
- Health food products
- Prosthetic devices
- Enzyme processing
- Hormone extraction

A task force of health institution purchasing managers has been created to identify product opportunities within the province. Fifty local firms with potential interest in manufacturing have been identified. A number of trade shows have been promoted by the Initiative to support interest in potential and existing Manitoba health care products within the province and for export.

Health Technology Opportunities:

Currently, over 400 Manitobans are employed in health research. This level of activity represents a tremendous potential for health technology transfer and contract research. And this potential is being realized through the co-ordinated efforts of government, commercial enterprises, and the non-profit sector of private research institutes, universities, and Crown corporations. Facilitating technology transfer and contract research between academic institutes and commercial enterprises is a major activity of H.I.D.I.

Co-ordination has been established between the Initiative and:

- University of Manitoba;
- St. Boniface General Hospital Research Foundation;
- Winnipeg Rh Institute;
- Children's Hospital of Winnipeg Research Foundation;
- Health Sciences Research Foundation;

- Whiteshell Nuclear Research Establishment;
- Manitoba Research Council Industrial Technology Center; and,
- a number of commercial bio-science corporations.

A non-exhaustive sample of areas of expertise within the province includes:

- Cardiovascular Medicine & Surgery
- Clinical Drug Trials
- Endocrinology and Growth Factors
- Geriatric Medicine and Aging
- Genetics and Molecular Biology
- Health Information Systems
- Monoclonal Antibodies
- Liver Research
- Hematology & Blood Products/Banking
- Neurosciences and Psychiatry
- Nuclear Radiation Applications
- Oncology
- Pediatrics and Child Health
- Radio-Pharmaceuticals
- Rehab. Medicine/Prosthetics
- Respirology
- Vitamin Metabolism

Health Information/Communication Opportunities:

A major thrust in Health Information and Communication is underway with participation from urban and rural hospitals, funding agencies, private practitioners, the Manitoba Health Organization, Manitoba Telephone System, Manitoba Data System, the Manitoba Department of Health, and commercial hardware, software, and communication entities. The goal of an intra- and inter-institution information and communication network is ambitious and provides numerous opportunities for the development and commercialization in Manitoba of innovative products and services both for use within the province and for export.

Emerging Needs Opportunities:

Manitoba is a unique location for the development of opportunities in rehabilitation, aging, and home care as a result of our demographics, our long standing experience, and our health care philosophy relating to these disciplines. Expertise in clinical care and research is evident in the Children's Rehabilitation Hospital, the Rehabilitation Hospital of the Health Sciences Center, St. Boniface General Hospital Geriatric Medicine and Palliative Care Departments, Municipal Hospitals, Deer Lodge Hospital, and in community care programs from the Manitoba Departments of Health and of Community Services. Commercial interests such as Otto Bock Orthopedic Industry of Canada, Ltd., have established in the province to partake of our unique opportunities.

APPENDIX II:

Listing of Manitoba Companies
Manufacturing in the Health Industries Sector

## MANITOBA'S HEALTH CARE PRODUCT MANUFACTURERS

1. ABI BIOTECHNOLOGY INC.
   - applied biotech research;
   - genetically produced growth hormone; Interleukin 2.

2. ACME CHROME & FURNITURE LTD.
   - geriatric and orthopedic chairs;
   - hospital and office furniture.

3. ALMICRO ELECTRONICS INC.
   - electronic personal alert device.

4. AMBUTECH INC.
   - mobility aids.

5. ARION (MFG.) OF CANADA LTD.
   - O.T.C. shampoos, cleansers and lotions.

6. ATLAS LABORATORIES
   - culture plates; bioassays.

7. ATOMIC ENERGY OF CANADA LTD.
   - biomedical and materials research;
   - diagnostic and therapeutic products.

8. AYERST LABORATORIES LTD.
   - Premarin (female estrogen).

9. BIOQUEST INTERNATIONAL INC.
   - bioassays for toxic potential.

10. BRUNSWICK FILING SYSTEMS INC.
    - colour-coded medical chart file folders/x-ray envelopes.

11. CAMELOT MEDICAL EQUIPMENT CORPORATION
    - respiratory equipment.

12. CHEMFET CANADA LTD.
    - diagnostic and pH electrodes;
    - leadwires; limb bands.

13. COLDSTREAM PRODUCTS OF CANADA LTD.
    - hospital heating and cooling appliances.

14. CUSTOM MOBILITY SYSTEMS LTD.
    - van lifts; porch lifts.

15. DALZELL AND POTTS LIMITED
    - hospital uniforms, smocks, and lab coats.

16. DESIGN MARBLE - DIVISION OF N & R CONSTRUCTION LTD.
    - tubs and sinks.

17. DIAGNOSTIC IMAGING SPECIALISTS CORPORATION
- radiographic quality control devices.

18. DIVERSITY PRODUCTS LTD.
- nurse call system; wandering patient alerts;
- electronic monitoring systems.

19. DOMINION VETERINARY LABORATORIES LTD.
- veterinary supplies.

20. EXPORT PACKERS LTD.
- lysosyme.

21. FLEETLINE INDUSTRIES LTD.
- portable dental equipment.

22. MANREX LIMITED
- pharmaceutical delivery and compliance products.

23. MEDITEK LTD.
- remanufacture of operating tables and sterilizers.

24. 3M - MINNESOTA MINING AND MANUFACTURING CANADA INC.
- electrodes; tendon implant; operating table plate.

25. NATIONAL BIOLOGICAL LABORATORY LTD.
- animal sera products.

26. NORTH ASSOCIATES LTD.
- body lotions; patient tubs; patient lifts.

27. OTTO BOCK ORTHOPEDIC INDUSTRY OF CANADA LTD.
- orthopedic appliances.

28. ST. JUDE MEDICAL CANADA, LTD.
- heart valves.

29. SELKIRK WOOD INDUSTRIES LTD.
- institutional furniture.

30. SHUR-LIFT INDUSTRIES
- patient lifts.

31. SIMMONS LIMITED
- hospital mattresses.

32. STEVENS AND SONS LTD.
- biomedical products.

33. STOCKWOODS INC.
- therapeutic recliner.

34. TANSLEY MANUFACTURING INC.
- stainless steel carts, autopsy tables.

35. VITA HEALTH COMPANY LTD.
    - health food products; vitamins.

36. WESTLAND PLASTICS LTD.
    - geriatric toilet seats; bath seats.

37. WESTNOFA OF CANADA LTD.
    - institutional and orthopedic furniture.

38. WINNIPEG Rh INSTITUTE INC.
    - Rh immune serum; albumin; Factors 8 & 9.

39. YORAM LTD.
    - dental equipment systems.